



## CHAPTER 3

# Using the System Setup Program

Each time you turn on your system, the system compares the configuration of the hardware installed in the system to the hardware listed in the system configuration information stored in nonvolatile random-access memory (NVRAM) on the system board. If the system detects a discrepancy, it generates error messages that identify the incorrect configuration settings. The system then prompts you to enter the System Setup program to correct the setting.

You can use the System Setup program as follows:

- To change the system configuration information after you add, change, or remove any hardware in your system
- To set or change user-selectable options—for example, the time or date on your system

After you set up your system, run the System Setup program to familiarize yourself with your system configuration information and optional settings. Dell recommends that you print the System Setup screens (by pressing <Print Screen>) or record the information for future reference.

Before you use the System Setup program, you need to know the kind of diskette drive(s) and hard-disk drive(s) installed in your system. If you are unsure of any of this information, see the Manufacturing Test Report that was shipped with your system. You can access the **Manufacturing Test Report** from the **Dell Accessories** folder.



*NOTE: The PowerEdge 350 system is a “headless” system that operates without keyboard, monitor, or mouse. You must connect the keyboard and monitor to perform the procedures in this chapter.*

## Entering the System Setup Program

Enter the System Setup program as follows:

1. Turn on your system.  
If your system is already on, shut it down and then restart it.
2. Press <F2> immediately after you see the following message:

F2 = Setup

If you wait too long and your operating system begins to load into memory, let the system complete the load operation, and then shut down the system and try again.



*NOTE: To ensure an orderly system shutdown, consult the documentation that accompanied your operating system.*

You can also enter the System Setup program by responding to certain error messages. See “Responding to Error Messages” in the following section.

## Responding to Error Messages

If an error message appears on your monitor screen while the system is booting, make a note of the message. Then, before entering the System Setup program, see “POST Beep Codes” and “System Messages” in your *Installation and Troubleshooting Guide* for an explanation of the message and suggestions for correcting any errors. (An exception to this routine: It is normal to receive an error message the first time you boot your system after installing a memory upgrade. In that situation, do not refer to “POST Beep Codes” and “System Messages.” Instead, follow the instructions for performing a memory upgrade in “Memory Modules” in your *Installation and Troubleshooting Guide*.)

If you are given an option of pressing either <F1> to continue or <F2> to run the System Setup program, press <F2>.

## Using the System Setup Navigation Keys

Table 3-1 lists the keys that you use to view, move around in, or change information on the System Setup screens and to exit the program.



*NOTE: For help using the System Setup program, press <F1>.*

**Table 3-1. System Setup Navigation Keys**

Keys	Action
	Activates submenus, displays a list, or selects a subfield depending on the type of action being performed.
	Selects a field within a configurable field.
 or 	Selects the previous or next value in a list, or the previous or next feature in a menu item's option list.

**Table 3-1. System Setup Navigation Keys** (continued)

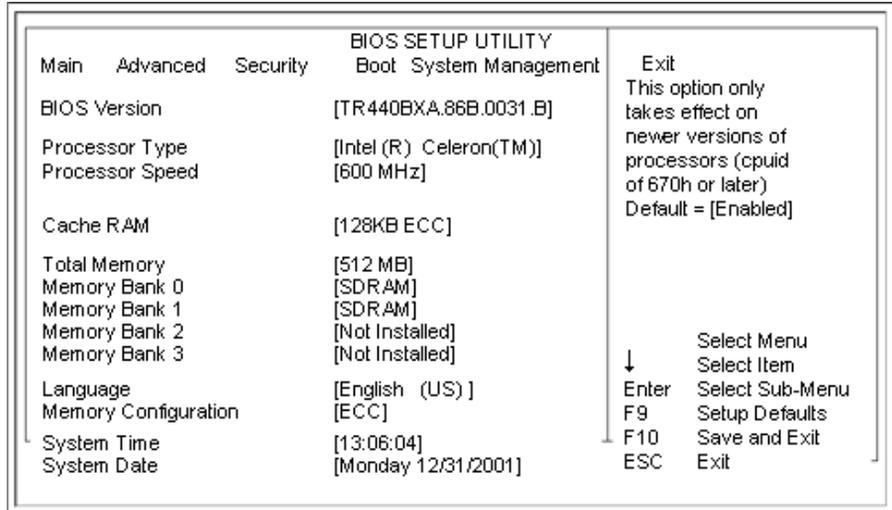
Keys	Action
 or 	Moves between major menu pages.
	Backs you out of any field. This key also undoes any action completed by pressing <Enter>, branches back to the parent menu if pressed while editing any field or selecting features in a menu, branches back to the parent menu when pressed in any submenu, or displays the exit confirmation window and asks whether changes can be discarded when pressed in any major menu.
	Loads the default values for all fields. A menu appears asking you to confirm. Select <b>Yes</b> to load the default options; select <b>No</b> to remain in the System Setup program.
	Saves the current field values and exits System Setup. A menu appears asking you to confirm. Select <b>Yes</b> to save and exit; select <b>No</b> to remain in the System Setup program.

# System Setup Menus and Options

The following subsections outline the menus and their associated options on the System Setup menu bar.

## Main Menu

When the System Setup program runs, the **BIOS SETUP UTILITY** main program screen appears (see Figure 3-1).



**Figure 3-1. BIOS Setup Utility Screen**

Notice that along the top of the screen is the **BIOS SETUP UTILITY** menu bar containing the following **BIOS SETUP UTILITY** menu options:

- **Main**
- **Advanced**
- **Security**
- **Boot**
- **System Management**
- **Exit**

These menu option items are explained in more detail in the following subsections.

The following options or information fields appear on the **Main BIOS SETUP UTILITY** screen:

- **BIOS Version** — Displays the basic input/output system (BIOS) version.
- **Processor Type** — Displays the microprocessor type. This option has no user-selectable settings.



- **Processor Speed** — Displays the microprocessor speed in megahertz (MHz). This option has no user-selectable settings.
- **Processor Serial Number** — Enables or disables (the default option) the microprocessor serial number (PSN).

*NOTE: This option is only available on systems with a Pentium III processor.*

- **Cache RAM** — Displays the cache random access memory (RAM) size in kilobytes (KB). This option has no user-selectable settings.
- **Total Memory** — Displays the amount of system memory. This option has no user-selectable settings.
- **Memory Bank 0, Memory Bank 1, Memory Bank 2, Memory Bank 3** — Displays the memory type for each memory bank. If no memory is present, `Not Installed` displays. This option has no user-selectable settings.
- **Language** — Selects the language used by the systems BIOS. The options are:
  - English (the default option)
  - French
  - German
  - Italian
  - Spanish



- **Memory Configuration** — Allows you to turn error reporting on or off.

*NOTE: This option is only available on systems with system and memory that support error correction code (ECC).*

- **System Time** — Resets the time on the system's internal clock.
- **System Date** — Resets the date on the system's internal calendar.



*NOTE: You can use the plus and minus keys to set the system time and date. Use the keys on the numeric keypad only; it does not matter if NumLock is on or off.*

## Advanced Menu

Selecting the **Advanced** option on the menu bar allows you to configure the following advanced system features:

- **Boot Configuration** — Configures the following functions on your system's next reboot:
  - **Plug & Play O/S** — Specifies if a Plug and Play operating system is being used. The default, **No**, configures all the devices in the system. **Yes** allows the system to configure Plug and Play devices not required for boot (assuming your system has a Plug and Play operating system).
  - **Reset Config Data** — Clears the peripheral component interconnect/Plug and Play (PCI/Plug and Play) configuration (stored in flash memory) on the next boot.
  - **NumLock** — Selects whether the <NumLock> key is off or on at system power on.
- **Peripheral Configuration** — Configures the following peripheral ports and devices.
  - **Serial Port A** — Enables (the default) or disables your system's serial port 1.
  - **Serial Port B** — Enables (the default) or disables serial port 2.
  - **Legacy USB Support** — Enables or disables (the default) support for your system's legacy USB.
- **IDE Configuration** — Configures the following IDE devices:
  - **IDE Controller** — **Disabled** disables your system's integrated IDE controller. **Primary** enables only your system's primary IDE controller. **Secondary** enables your system's secondary IDE controller. **Both** (the default) enables both of your system's IDE controllers.
  - **Hard-Disk Predelay** — Selects your system's hard-disk drive predelay: **3 seconds, 6 seconds, 9 seconds, 12 seconds, 15 seconds, 21 seconds, or 30 seconds**. This option also configures your system's primary and secondary IDE devices either as the name of the drive found, or as **Not Enabled**.
  - **Primary IDE Master** — Displays the name of your system's installed device, or displays **Not Installed**. If an IDE device is detected, you can configure the following options: **Type (Auto is the default)**, **LBA Mode Control (Enabled is the default)**, **Multi-Sector Transfers (16 sectors is the default)**, **PIO Mode (Auto is the default)**, **Ultra MDA (Disabled is the default)**.
  - **Primary IDE Slave** — Displays the name of your system's installed device, or displays **Not Installed**. If an IDE device is detected, you can configure the following options: **Type (Auto is the default)**, **LBA Mode Control (Enabled is the default)**, **Multi-Sector Transfers (16 sectors is the default)**, **PIO Mode (Auto is the default)**, **Ultra MDA (Disabled is the default)**.

- **Secondary IDE Master** — Displays the name of your system's installed device, or displays **Not Installed**. If an IDE device is detected, you can configure the following options: **Type (Auto is the default)**, **LBA Mode Control (Enabled is the default)**, **Multi-Sector Transfers (16 sectors is the default)**, **PIO Mode (Auto is the default)**, **Ultra MDA (Disabled is the default)**.
- **Secondary IDE Slave** — Displays the name of your system's installed device, or displays **Not Installed**. If an IDE device is detected, you can configure the following options: **Type (Auto is the default)**, **LBA Mode Control (Enabled is the default)**, **Multi-Sector Transfers (16 sectors is the default)**, **PIO Mode (Auto is the default)**, **Ultra MDA (Disabled is the default)**.
- **Diskette Configuration** — Configures the following diskette drive settings:
  - **Diskette Controller** — Enables (the default) or disables the integrated diskette controller.
  - **Floppy A** — Enables (the default) or disables the diskette drive and specifies its size: **360 KB 5.25"**, **1.2 MB 5.25"**, **720 KB 3.5"**, **1.44/1.25 MB 3.5"** (the default), or **2.88 MB 3.5"**.
  - **Diskette Write Protect** — Enables or disables (the default) write-protect for the diskette drive.
- **Event Log Configuration** — Configures the following event log options:
  - **Event Log** — Displays whether or not space is available in your system's event log. This option has no user configurable settings.
  - **Event Log Validity** — Displays whether or not the contents of your system's event log are valid. This option has no user configurable settings.
  - **Clear All Event Logs** — Clears your system's event log after rebooting. **No** is the default option.
  - **Event Logging** — Enables (the default) or disables event logging.
  - **ECC Event Logging** — Enables (the default) or disables ECC event logging.

## Security Menu

Selecting the **Security** option on the menu bar allows you to set the following password and security features:

- **User Password Is** — Displays whether or not your system has a user password installed (entered). This option has no user configurable settings.
- **Supervisor Password Is** — Displays whether or not your system has a supervisor password installed (entered). This option has no user configurable settings.
- **Set Supervisor Password** — Specifies a supervisor password that can be up to seven alphanumeric characters long. The default option is no supervisor password installed.
- **Set User Password** — Specifies a user password that can be up to seven alphanumeric characters long. The default option is no supervisor password installed.



- **Clear User Password** — Clears your system's installed user password. This option has no user configurable settings.

*NOTE: This feature is displayed only after the supervisor password is set.*

- **User Access Level** — **Limited** allows the user to only change limited fields, such as **Date** and **Time**. **No Access** prevents user access to the Setup Utility. **View Only** allows user access to the Setup Utility but no fields can be changed. **Full** allows the user to change any fields. Only the Supervisor password can set the user access levels.

## Boot Menu

Selecting the **Boot Menu** option on the menu bar allows you to set the following boot features and the boot sequence:

- **Quiet Boot** — Enables or disables (the default) displaying normal power-on self-test (POST) messages.
- **Quick Boot** — Enables or disables (the default) your system's quick boot capability. This capability allows your system to skip certain tests while rebooting which decreases the time needed to boot your system.
- **After Power Failure** — Specifies the mode of operation when power is lost: **Stays Off** keeps your system off after power is restored, **Power On** boots the system after power is restored, **Last State** (the default) restores the system to the same state it was in before the power failed.



*NOTE: To enable to BIOS to correctly set this feature, your system must be shut down using the power switch.*

- **On Modem Ring** — Determines whether or not your system will **Stay Off** (the default) or **Power On** when its power is off and the modem is ringing.
- **On LAN** — Determines whether or not your system will **Stay Off** or **Power On** (the default) when a local area network (LAN) wake up event occurs.
- **On PME** — Determines whether or not your system will **Stay Off** (the default) or **Power On** when its PCI Power Management Enabled wake up event occurs.
- **IDE Drive Configuration** — Configures your system's peripheral devices. See the following configurable options for other IDE devices which are similar to the Primary Master IDE options:
  - **Primary Master IDE** — Specifies the **Primary Master IDE** drive configuration: **1st IDE** (the default), **2nd IDE**, **3rd IDE**, or **4th IDE**.
  - **Primary Slave IDE** — Specifies the **Primary Slave IDE** drive configuration: **1st IDE**, **2nd IDE** (the default), **3rd IDE**, or **4th IDE**.
  - **Secondary Master IDE** — Specifies the **Secondary Master IDE** drive configuration: **1st IDE**, **2nd IDE**, **3rd IDE** (the default), or **4th IDE**.
  - **Secondary Slave IDE** — Specifies the **Secondary Slave IDE** drive configuration: **1st IDE**, **2nd IDE**, **3rd IDE**, or **4th IDE** (the default).
- **1st to 8th Boot** — Configures your system's boot sequence from its available devices: **Floppy** (the default), **IDE-HDD**, **ATAPI CD-ROM**, and **IDE-HDD**.

## **System Management Menu**

Selecting the **System Management** menu option allows you to set the following server management features:

- **Serial Console Redirection** — Enables or disables (the default) your system's serial console redirection.
- **Baud Rate** — Sets your system's baud rate: **9600**, **19.2 KB** (the default), **38.4 KB**, or **115 KB**.
- **Flow Control** — Enables or disables one of the following flow controls: **No Flow Control**, **CTS/RTS** (the default), **XON/XOFF**, or **CTS/RTS+CD**.

## **Exit Menu**

Selecting the **Exit** menu option allows you to exit the System Setup program while saving, discarding, or loading default settings:

- **Exit Saving Changes** — Exits your system's setup and saves changes. This option has no user-configurable settings.
- **Exit Discarding Changes** — Exits your system's setup and discard changes. This option has no user-configurable settings.
- **Load Setup Defaults** — Loads your system's setup default settings. This option has no user-configurable settings.
- **Load Custom Defaults** — Loads your system's custom settings. This option has no user-configurable settings.
- **Save Custom Defaults** — Saves your system's custom settings. This option has no user-configurable settings.
- **Discard Changes** — Discards your system's changes. This option has no user-configurable settings.

## **Using the System Password Features**

**NOTICE: The password features provide a basic level of security for the data on your system. However, they are not foolproof. If your data requires more security, it is your responsibility to obtain and use additional forms of protection, such as data encryption programs.**

The System Setup program allows you to install supervisor and user passwords. A supervisor password is used to access the System Setup program while a user password is used to access the system, such as when logging in.

Your Dell system is shipped to you without the supervisor password feature installed. If system security is a concern, you should operate your system only with supervisor password protection.

You can assign a supervisor password whenever you use the System Setup program. After a supervisor password is assigned, only those who know the password have full use of the System Setup program.

When the **Set Supervisor Password** option is **Installed**, the system then prompts you for the supervisor password (only when going into system setup) just after the system boots.

To change an existing supervisor password, you must know the supervisor password (see the section “Deleting or Changing an Existing Supervisor Password” found later in this chapter). If you assign and later forget a supervisor password, you need to be able to remove the system cover to change a jumper setting that disables the supervisor password feature (see the section “Deleting a Forgotten Password” found later in this chapter). Note that this procedure erases the user password at the same time.

**NOTICE: If you leave your system running and unattended without having a supervisor password assigned, or if you leave your system unlocked so that someone can disable the password by changing a jumper setting, anyone can access the data stored on your hard-disk drive.**

### **Assigning a Supervisor Password (System Setup Only)**

Before you can assign a supervisor password, you must enter the System Setup program and select the **Set Supervisor Password** option.



*NOTE: The supervisor password controls the user password access to the system setup. See “Security Menu” earlier in this chapter for a description of the levels of user password access.*

When a supervisor password is assigned, the setting shown for the **Set Supervisor Password** option is **Installed**.

When no supervisor password is assigned and the password jumper on the system board is in the uninstalled position (its default), the setting shown for the **Set Supervisor Password** option is **Not Installed**. Only when this option is set to **Not Installed** can you assign a supervisor password, using the following procedure:

1. Enter the System Setup program by pressing <F2>.
2. Select the **Security** screen.
3. Verify that the **Supervisor Password Is** option is set to **Not Installed**.
4. Select the **Set Supervisor Password** option and press <Enter>.

The system prompts you to `Enter Supervisor Password`.

5. Type your supervisor password.

You can use up to seven characters in your password.

As you press each character key (or the spacebar key for a blank space), an asterisk (\*) placeholder appears in the field.

The password assignment operation recognizes keys by their location on the keyboard; it is case sensitive. This means that the software distinguishes between lowercase and uppercase characters. For example, if you have an *M* in your password, the system does not recognize either *M* or *m* as correct; your system will

only accept *M*. Certain keys and key combinations are not valid. If you enter one of these keys or combinations, the system does not accept them. To erase a character when entering your password, press <Backspace> or the left-arrow key.



*NOTE: To escape from the field without assigning a supervisor password, press the <Esc> key at any time before completing step 5.*

6. Press <Enter>.

The system prompts you to `Confirm New Password`, followed by another empty seven-character field in square brackets.

7. To confirm your new password, type it a second time and press <Enter>.

The system tells you the `Password Successfully Installed`.

The password setting changes to **Installed**. Your supervisor password is now set; you can exit the System Setup program and begin using your system. Note, however, that password protection does not take effect until you reboot the system by turning the system off and then on again.

## **Using Your Supervisor Password to Secure Your System Setup**

If the **Supervisor Password Is** option is set to **Installed**, the following prompt appears:

```
Enter CURRENT Password
```

After you type the correct supervisor password and press <Enter>, you can log on to the system as you normally would.

If a wrong or incomplete supervisor password is entered, the following message appears:

```
Enter CURRENT Password
```

If an incorrect or incomplete supervisor password is entered again, the same message appears.

The third and subsequent times an incorrect or incomplete supervisor password is entered, the system displays the following message:

```
Invalid Password-System Halted
```

To reboot the system and either set a new password, press <Ctrl><Alt><Del> or the reset button on the system unit.

The number of unsuccessful attempts made to enter the correct supervisor password can alert you to an unauthorized person attempting to use your system.

Even after your system is turned off and on, the previous message is displayed each time an incorrect or incomplete supervisor password is entered.



*NOTE: The supervisor password only applies to the System Setup program. A user password should be installed to completely secure your system. See “Assigning a User Password” found later in this chapter.*

## **Deleting or Changing an Existing Supervisor Password**

To delete or change an existing supervisor password, perform the following steps:

1. Enter the System Setup program by pressing <F2>.
2. Select the **Security** screen field to verify that the **Supervisor Password Is** option is set to **Installed**.
3. Select the **Set Supervisor Password** option and press <Enter>.

The system prompts you to Enter Current Password.

4. Type your current supervisor password and press <Enter>

The system prompts you to Enter Supervisor Password.



*NOTE: If you want to delete the password and not enter a new password, press <Enter> without typing in a new password, leaving the **Enter Supervisor Password** field blank.*

5. To assign a new password, follow the procedure from step 4 on in “Assigning a Supervisor Password (System Setup Only)” found earlier in this chapter.

## **Using the User Password Feature**

Your Dell system is shipped to you without the user password feature installed. If system security is a concern, you should operate your system with user password protection.

You can assign a user password whenever you use the System Setup program. After a user password is assigned, only those who know the password have access to the System Setup program.

To change an existing user password, you must know the user password (see the section “Deleting or Changing an Existing User Password” found later in this chapter). If you assign and later forget a user password, you need to be able to remove the system cover to change a jumper setting that disables the user password feature. See “Deleting a Forgotten Password” found later in this chapter. Note that this procedure erases the supervisor password at the same time.

**NOTICE: If you leave your system running and unattended without having a user password assigned, or if you leave your system unlocked so that someone can disable the password by changing a jumper setting, anyone can access the data stored on your hard-disk drive.**

## Assigning a User Password

Before you can assign a user password, you must enter the System Setup program and select the **Set User Password** option.

To assign a user password, perform the following steps:

1. Enter the System Setup program by pressing <F2>.
2. Select the **Security** screen.
3. Select the **Set User Password** option and press <Enter>.

The system prompts you to `Enter User Password`.

4. Type your user password.

You can use up to seven characters in your password.

As you press each character key (or the spacebar key for a blank space), an asterisk (\*) placeholder appears in the field.

The password assignment operation recognizes keys by their location on the keyboard; it is case sensitive. This means that the software distinguishes between lowercase and uppercase characters. For example, if you have an *M* in your password, the system does not recognize either *M* or *m* as correct; your system will only accept *M*. Certain keys and key combinations are not valid. If you enter one of these keys or combinations, the system does not accept them. To erase a character when entering your password, press <Backspace> or the left-arrow key.



*NOTE: To escape from the field without assigning a user password, press the <Esc> key at any time prior to completing step 4.*

5. Press <Enter>.

The system prompts you to `Confirm New Password`, followed by another empty seven-character field in square brackets.

6. To confirm your password, type it a second time and press <Enter>.

The system tells you that the `Password Successfully Installed`.

The password setting changes to **Installed**. Your supervisor password is now set; you can exit the System Setup program and begin using your system. A change to the **Set User Password** option becomes effective immediately (rebooting the system is not required).



*NOTES: The user password can be the same as the supervisor password.*

*If the two passwords are different, the user password can be used as an alternate supervisor password. However, the supervisor password cannot be used in place of the user password.*

## Operating With a User Password Installed

If **Set User Password** is set to **Installed**, you must enter the correct user password before you can modify the majority of the System Setup options. When you start the System Setup program, the program prompts you to type the password.

If you do not enter the correct password in three tries, the system displays the following message:

```
Invalid Password-System Halted
```

## Deleting or Changing an Existing User Password

To delete or change an existing user password, perform the following steps:

1. Enter the System Setup program by pressing <F2>.
2. Select the **Security** screen field to verify that the **User Password Is** option is set to **Installed**.
3. Select the **Set User Password** option and press <Enter>.

The system prompts you to `Enter Current Password`.

4. Type your current user password and press <Enter>

The system prompts you to `Enter User Password`.



*NOTE: If you want to delete the password and not enter a new password, press <Enter> without typing in a new password, leaving the **Enter User Password** field blank.*

5. To assign a new password, follow the procedure from step 4 in “Assigning a User Password” found earlier in this chapter.

## Deleting a Forgotten Password

If you forget your supervisor or user password, you cannot operate your system or change settings in the System Setup program until someone having a supervisor password clears and installs a new user password.

If you forgot your supervisor or user password, you cannot operate your system or change settings in the System Setup program until a trained service technician opens the system chassis, changes the password jumper setting to disable the passwords, and erases the existing passwords. This procedure is described in “Disabling Forgotten Passwords” in the *Installation and Troubleshooting Guide*.